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node and a network sink node;

code means for determining and summing the unavailability and availability of the selected connection under the simulated link failure condition;

code means for repeating steps (c), and (d) for all connections of the network; and

code means for repeating steps (a) to (e) link failure has been simulated on all links of the network or the summed availability has been determined to converge to a constant value, whichever is earlier.

13. (new) The computer program product according to claim 12, further comprising:
code means for averaging the service availability across all connections to generate the service availability of the network.

14. (new) The computer program product according to claim 12, further comprising:
code means for randomly selecting a link based on the attributes of the links.

15. (new) The computer program product according to claim 14, further comprising:
code means for randomly selecting a link based on distance, time-to-failure parameter and time-to-recover/repair.

REMARKS

The present application contains claims 1-5 and 12-15.

Applicant has amended the specification to clarify the terms 'converge' and 'convergence' used on page 7 of the specification by stating 'by convergence to a constant value, it is meant that the availability remains substantially the same after an additional simulation including an additional link'. Support for this amendment can be found, for example, on page 7, line 6 '[...] If U and A are changing so little[...]' and throughout the originally filed specification.

Applicant has amended the specification to correct a clerical error on page 10 by deleting 'TBD'.

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Applicant has amended claim 1 to better describe the steps of the simulation method for the network availability. Support for the amendment of the claims can be found, for example, in Figure 3, and from page 5, line 31, to page 7, line 10.

Applicant has amended claim 3 to delete 'the above'. Support for the amendment of the claims can be found, for example, from page 10, line 23, to page 11, line 4.

Applicant has amended claim 4, to recite the links to be part of the network instead of reintroducing the nodes and links, to better define the term 'attributes', and to recite the step 'random selecting link' as part of the selecting link step of claim 1. Support for the amendment of the claims can be found, for example, from page 8 line 18 to page 10 line 6, and in figures 4 to 11.

Applicant has amended claim 5 by deleting two 'hereinafter called ...'.

Applicant has deleted claims 6 to 11 without prejudice and disclaimer.

Applicant has added new claims 12 to 15, directed to software code implementing the claimed simulation method. Support for the new claims can be found throughout the originally filed application, it should be apparent to a person skilled in the art that the present invention can be implemented through software for performing the simulation on a computer.

The amendment to the claims is fully supported by the application as originally filed. No new matter has been introduced by way of the amendment.

The Examiner has objected to the expression 'if no, determine if U and A converge' at line 5 on page 7, under 35 U.S.C. 112, first paragraph. In response, Applicant has amended the specification to clearly state that A converges to a constant value, and that 'by convergence to a constant value it is meant that the availability remains substantially the same after an additional simulation including an additional link'.

Hence, it is respectfully submitted that the specification meets the requirements under 35 U.S.C. 112, first paragraph. Applicant respectfully requests the Examiner to withdraw the rejections.

The Examiner has rejected claim 1 under 35 U.S.C. 112, second paragraph, stating that

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the expression '(c) selecting a connection between two network source and sink nodes' is not understood. In response, Applicant has amended claim 1 to recite: '(c) selecting a connection between a network source node and a network sink node;'.

The Examiner has further rejected claim 1 under 35 U.S.C. 112, second paragraph, stating that the condition 'until the summed unavailability and availability has been determined to converge' cannot be known in advance. In response, Applicant has amended claim 1 based on the originally filed figure 3, in particular, the convergence to a constant value is recited as: "repeating steps (a) to (e) until either a link failure has been simulated on all links of the network or the summed availability has been determined to converge to a constant value, whichever is earlier".

Hence, it is respectfully submitted that claim 1 meets the requirements under 35 U.S.C. 112, second paragraph. Applicant respectfully requests the Examiner to withdraw the rejections.

The Examiner further rejected claims 1-11 under 35 U.S.C. 103(a) as being unpatentable over Puranik (US Patent No. 6,003,090), hereinafter referred as Puranik.

Applicant respectfully requests reconsideration and withdrawal of this objection in view of the amendments made herein and the following comments.

Applicant submits that the instant application, as claimed by the amended claims, is directed to a simulation method of determining service availability of a communications network by selecting a link between two network nodes; and performing a simulated link failure; selecting a connection; determining and summing the unavailability and availability of the selected connection under the simulated link failure condition; repeating the steps for all connections of the network; until either a link failure has been simulated on all links of the network or the summed availability has been determined to converge to a constant value. It should become apparent to a person skilled in the art that the current application is directed to a network with more than one point-to-point link.

Puranik 'focuses on useful devices and defines the availability of these useful devices in terms of point-to-point availability of the useful devices and their users' (column 3, lines 8-11). Here, Puranik includes in the 'devices' routers, servers, and workstations

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(column 3, lines 14-17), those devices are non-physical layer devices according to the OSI model. Those devices are grouped as 'useful' or 'more important' or 'less important'. In addition, Puranik is directed to point-to-point availability: 'The point-to-point availability measurement allows network managers to provide a more realistic view of the effect of unavailability of certain devices, in terms of the number of "affected users" who try to access the network through the unavailable device or devices.' (column 3, lines 21-25).

At column 3, lines 14, Puranik actually teaches away one important aspect of the simulation method claimed in the present invention: 'This method allows network managers to concentrate on real problems, rather than working with aggregations of the up times and down times (percentages) of all of the network devices whether or not they are "useful."'

Hence, Applicant submits that one skilled in the art, in the light of the state of the art as described in Puranik which teaches point-to-point availability of a network of routers, servers and workstations, would not have the motivation to simulate the service availability of a network by summing the availability of the connections of the network.

Hence, it is respectfully submitted that claims 1-5 and 12-15 are new and unobvious in view of the cited reference. Applicant respectfully requests the Examiner to withdraw the rejections.

Applicant respectfully requests reconsideration of this application, based on the foregoing amendments and remarks.

Respectfully Submitted,



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